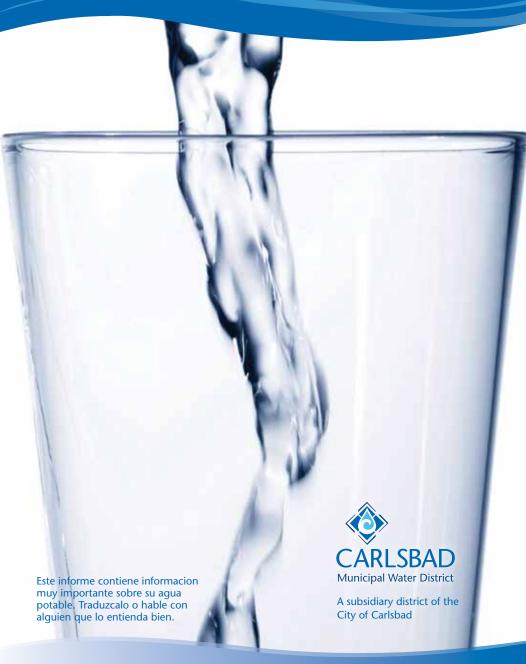
# Water Quality Report 2010



### Dear Carlsbad Municipal Water District Customer,

The Carlsbad Municipal Water District Water Quality Report is provided annually to present detailed water quality information to our customers. I am happy to report that in 2009, the Carlsbad Municipal Water District delivered high quality drinking water to more than 38,000 homes and businesses and this water met all 2009 state and federal drinking water quality standards.

This report, which all California water agencies are required to prepare, explains where Carlsbad's drinking water comes from, provides detailed 2009 water quality test results, and includes water use restrictions and a conservation check list.

We want you to feel confident that the water provided by the Carlsbad Municipal Water District is held to the highest standards of safety and quality. If you have questions about any of the information in this report, please call us at 760-438-2722.

Sincerely,

Glenn Pruim, General Manager

Carlsbad Municipal Water District

Water provided by the Carlsbad Municipal Water District meets all 2009 state and federal drinking water standards. This report provides detailed water quality test results, explains where Carlsbad's drinking water comes from and includes the mandatory water conservation rules currently in effect.



### Where our water comes from

The Carlsbad Municipal Water District currently imports all of its drinking water supply. There are no local sources of drinking water. Imported water originates hundreds of miles away from the Colorado River through the Colorado River Aqueduct, and from Northern California through the California



California Aqueduct

Aqueduct (also known as the State Water Project).

Water from these sources is imported and treated by the Metropolitan Water District of Southern California at its Lake Skinner Treatment Plant in Riverside County and by the San Diego County Water Authority at its Twin Oaks Valley Water Treatment Plant in San

Marcos. After rigorous treatment, the water travels through San Diego County Water Authority owned pipelines and is purchased and distributed by the Carlsbad Municipal Water District to its customers.

### Water cutbacks

The region's allotment of imported water has been significantly reduced due to continued drought conditions along the Colorado River and legal restrictions on water from Northern California to protect threatened fish species. Water will always be a precious resource in Southern California. Please continue to make every effort to conserve.

### Sources

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be



Colorado River

obtained by calling the U.S. Environmental Protection Agency's Safe Drinking Water Hotline at 800-426-4791.

### Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- Inorganic contaminants, such as salts and metals, that can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
- Pesticides and herbicides, that may come from a variety of sources such as agriculture, urban stormwater runoff and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application and septic systems.
- Radioactive contaminants, that can be naturally occurring or be the result of oil and gas production and mining activities.

# **Drinking water regulations**

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency and the California Department of Public Health prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department of Public Health regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

### Special note:

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders,

some elderly persons, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. U.S. Environmental Protection

Some people may be more vulnerable to contaminants in drinking water than the general population.

Agency/Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at 800-426-4791.

### Source water assessment

The Metropolitan Water District of Southern California completed its source water assessment of its Colorado River and State Water Project supplies in December 2002. Colorado River supplies are considered to be most vulnerable to contamination from recreation, urban/stormwater runoff, increasing urbanization in the watershed and wastewater. State Water Project



Storm drain outfall

supplies are considered to be most vulnerable to contamination from urban/stormwater runoff, wildlife, agriculture, recreation and wastewater. A summary of the assessment can be obtained by contacting the Metropolitan Water District by phone at 213-217-6850.

### How to contact us

This report covers testing for contaminants in 2009. For questions or concerns regarding the quality of Carlsbad's drinking water, contact Steven Plyler at the Carlsbad Municipal Water District at 760-438-2722 or e-mail water@carlsbadca.gov.

To participate in decisions that affect drinking water in the Carlsbad Municipal Water District service area, please watch the Carlsbad Municipal Water District Board of Directors meeting agenda for drinking water items. Carlsbad Municipal Water District This report can be downloaded from www.carlsbadca.gov/water

Board meetings are held in conjunction with the Carlsbad City Council on an as needed basis on Tuesday evenings. Agendas may be obtained at www.carlsbadca.gov or Carlsbad City Hall, 1200 Carlsbad Village Drive. Comments regarding drinking water are always welcome.

This report is mailed to all Carlsbad Municipal Water District customers and is available at most city facilities. This report may be photocopied and distributed or posted in a prominent place at your facility. Additional copies are available on the Internet at www.carlsbadca.gov/water.

### Carlsbad Municipal Water District

5950 El Camino Real, Carlsbad, CA 92008

Hours: Monday through Friday, 8 a.m. to 5 p.m.

760-438-2722 water@carlsbadca.gov



Additional sources for water quality information:

### San Diego County Water Authority

858-522-6600 • www.sdcwa.org

### Metropolitan Water District of Southern California

800-CALL-MWD (225-5693) • www.mwdh2o.com

### California Department of Public Health

Division of Drinking Water & Environmental Management 619-525-4159 www.cdph.ca.gov

### U.S. Environmental Protection Agency

Office of Ground Water & Drinking Water Safe Drinking Water Hotline 800-426-4791 www.epa.gov/safewater/hfacts.html

# Saving a precious resource

Outdoors

The Carlsbad Municipal Water District offers free home water evaluations to its customers to help improve water conservation. Use the checklist below and take a mini survey.

$\sim$	dtd-0013
	Adjust the sprinkler timer to abide by landscape watering rules and to suit plant types and the season.
	Reduce water runoff and allow deeper water absorption by setting the timer to run half the normal time and run a second cycle a half hour later
	Install a new battery on the sprinkler timer every six months to prevent it from reverting to factory settings after a power outage.
	Change pop-up spray sprinkler heads with new rotating sprinkler nozzles that use 20 percent less water.
	Apply a two-to-four-inch layer of mulch around plants to minimize water loss.
	Replace grass with drought tolerant plants or an artificial lawn.
In	doors
	Replace an older toilet with a high efficiency model.
	Check toilets for leaks by putting a few drops of food coloring in the upper tank. There is a leak if the color appears in the bowl after 15 minutes.
	Replace showerheads with ones use 2.5 gallons a minute or less.
	Run full loads of dishes and laundry.
	Install aerators on sink faucets.

**For a demonstration of these tips**, watch short, informational videos on the city's YouTube channel at youtube.com/user/cityofcarlsbadCA and on the city's TV channel on Time Warner channel 24/126.

To schedule a home water survey, call 760-438-2722

# How to read this report

As you read the water quality tables in this report, compare the level of constituents found in Carlsbad Municipal Water District's water in the "Skinner Plant" and "Twin Oaks Valley Plant" columns with the standards set for them in the MCL and PHG columns. The Carlsbad Municipal Water District met all drinking water standards in 2009.

The following are key terms to help you understand the standards we used to measure drinking water safety.

### Maximum Contaminant Level (MCL)

The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste and appearance of drinking water.

### Maximum Contaminant Level Goal (MCLG)

The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.

### Public Health Goal (PHG)

The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

### Maximum Residual Disinfectant Level (MRDL)

The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

### Maximum Residual Disinfectant Level Goal (MRDLG)

The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

### Primary Drinking Water Standard (PDWS)

MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

### Treatment Technique

A required process intended to reduce the level of a contaminant in drinking water.

### **Regulatory Action Level**

The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

### **Abbreviations**

Al Aggressiveness Index

AL Action Level

CFU Colony-Forming Units

DBP Disinfection By-Products

DLR Detection Limits for purposes of Reporting

MBAS Methylene Blue Active Substances

MCL Maximum Contaminant Level

MCLG Maximum Contaminant Level Goal

MFL Million Fibers per Liter

MRDL Maximum Residual Disinfectant Level

MRDLG Maximum Residual Disinfectant Level Goal

N Nitrogen

NA Not Applicable

ND Not Detected

NL Notification Level

NTU Nephelometric Turbidity Units

P or ND Positive or Not Detected

pCi/L picoCuries per Liter
PHG Public Health Goal

ppb parts per billion or micrograms per liter (µg/L)
ppm parts per million or milligrams per liter (mg/L)
ppq parts per quadrillion or picograms per liter (pg/L)
ppt parts per trillion or nanograms per liter (ng/L)

RAA Running Annual Average

SI Saturation Index (Langelier)

TOC Total Organic Carbon
TON Threshold Odor Number

Treatment Technique

μS/cm microSiemen per centimeter; or micromho per

centimeter (µmho/cm)

2009 Water Quality Analysis – Metropolitan Water District of Southern California and the San Diego County Water Authority

NA   NA   NA   NA   NA   NA   NA   NA								Treatme	Treatment Plant Effluent	fluent		
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roling 34 Sites)  ALS (k)  N BY-PRODU( There are a service)  I)  N BY-PRODU( (i)  I)  There are a service)  There are a service)  There are a service and service are a service ar	enic	qdd	10	0.004	2	Highest RAA			ND	Average		production wastes
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rpling 34 Sites) ALS (k) N BY-PRODUC N BY-PRODUC Planes Planes Planes N (k) N BY-PRODUC N (K) N BY-PRO	ium	qdd	1,000	2,000	100	Average			ND	Sample	110	natural deposits erosion
ALS (k)  N BY-PRODUC hanes al Sampling) hanes	cal 2009 Sampling 34 Sites)	aud	17	c	400	Kange 90% ilo	ND - 0.37	(Local)				Internal corrosion of household pipes; natural
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I)  N BY-PRODU( N Branes Ranes Ranes Ranes Ranes	ate (as N) (i)	mdd	10	10	0.4	Highest KAA			ND	Average	1	and sewage; natural deposits erosion
N BY-PRODUC hanes al Sampling) hanes hanes	Ss Alpha					Range			33-43	Range	26-QN	
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PRODUC	ss Beta	77.				Range			ND - 8.8	Range	QN	
PRODUC	ticle Activity (I)	pCi/L	20	(0)	4	Average			ND 22 22	Average	٦.	Decay of natural and man-made deposits
PRODU(	anii a	//:	20	0.43	,	Average			2.3 - 2.1	Average	2.5 - 4.1	Procion of natural deposits
pling)		ISINFECT	ANT RESI	DUALS. A	ND DISI	NFECTION E	Y-PRODUC	TS PRECUR	SORS (n)	200	9	
pling) ppb 80 NA 1						Range	27 - 91	(Local)				
ppb 80 NA 1 ppb 80 NA 1	HM) (o) (Local Sampling)	qdd	80	Ą	-	Highest RAA	45.9	(Local)				By-product of drinking water chlorination
ppb 80 NA 1 ppb 80 NA 1	al Trihalomethanes					Range			26 - 56	Range	16 - 49	
lina) And	HM) (o)	qdd	80	NA	-	Average			41	Average	28	By-product of drinking water chlorination
VN NA	al Trihalomethanes	9	G	S Z	,	Range	Distribution	Distribution System-wide:	15 - 81			O
AN ANA	nivi) (0)	add	00	Ž	l	Range	PISTIDATION S	6 - 19 (Local)	99			Dy-product of driffking water childrination
000	A5) (p) (Local Sampling)	qaa	09	Ą	-	Highest RAA	18.8	(Local)				Bv-product of drinking water chlorination
								,				

Haloacetic Acids (five)					Kande		6.9	Kande	ND - 5.0	
(d)	ddd	60	NA	1	Average		12	Average	2.4	By-product of drinking water chlorination
Haloacetic Acids (five) (HAA5) (p)	qaa	9	Ϋ́	-	Range Highest RAA	Distribution System-wide:	1.5 - 30			Bv-product of drinking water chlorination
Total Chlorine Residual	ppm	[4.0]	[4.0]	NA	Range Highest RAA	Distribution System-wide: Distribution System-wide:	1.5 - 3.0			Drinking water disinfectant added for treatment
Bromate (q)	ppb	10	0.1	5.0	Range Highest RAA		N N	Range Average	ND - 15 ND	By-product of drinking water ozonation
	mdd	Ħ	AA	0.30	Range Average		<b>=</b> =	Range	1.9 - 3.4	Various natural and man-made sources
SECONDARY STANDARDS	ij	Standards				_				
Chloride	maa	200	Ϋ́	Ϋ́Z	Range Highest RAA		93 - 100 97	Sample	86	Runoff/leaching from natural deposits; seawater influence
	e e	45	V 14	4	Range		1-2	Range	Q	Materials of minimum of managements
	UNITS	15	NA	NA	Hignest RAA Range		VN VN	Rande	DN - ON	Naturally-occurring organic materials
Manganese	qdd	50	NL = 500	20	Average		QN	Average	S QN	Leaching from natural deposits
Odor Threshold (r)	TON	3	NA	1	Kange Average		12 - 24 18	Kange Average	Z-QN ND	Naturally-occurring organic materials
Specific Conductance	m2/Sm	1 600	VΑ	ΨN	Range Highest RAA		760 - 1,100	Sample	086	Substances that form ions in water, seawater influence
Original Contraction		2002	VIV	4	Range		130 - 250	Single	000	Recording from natural deposits;
otal Dissolved Solids		000	VA.	6.0	Range		440 - 640	Single	207	Runoff/leaching from natural deposits;
	mdd	1,000	NA	NA	Highest RAA		580	Sample	280	seawater influence
	DTN	2	AN	AN	Highest RAA		0.05	Z Z Z		Soil runoff
ED	NTAMIN	ANTS MC	NITORII	NG RUL	CONTAMINANTS MONITORING RULE (UCMR2)	(s)				
List 2 - Screening Survey					q	-	-			
N-Nitrosodimethylamine (NDMA)	qaa	AN	Ą	0.002	Kange		ND - 0.004 ND	¥ X		By-product of drinking water chloramination; industrial processes
OTHER PARAMETERS										
MICROBIOLOGICAL					C		9	4		
HPC (d)	CFU/mL	TT	NA	NA	Average		ND ND	NA		Naturally present in the environment
CHEMICAL					1	=		i		
Alkalinity	ppm	NA	NA	NA	Range Highest RAA		94 - 120 110	Single Sample	120	
Boron	qaa	NL = 1.000	AN	100	Range Highest RAA		130 - 140	Sample	QN	Runoff/leaching from natural deposits; Industrial wastes
Solvium	a au		ΝΔΝ	ΔN	Range Highest RAA		44 - 74	Single	E 9	
Chlorate	que	N = 800	AN AN	20	Range	Distribution System-wide:	34 ND - 79	Single	220	By-product of drinking water chlorination;
Corrosivity (u)	2 4	VIV	VIV	012	Range		11.9 - 12.3	Single	40	Elemental balance in water, affected
(as Aggressiveriess maex) Corrosivity (v)	ī	Į.	1	Į.	Range		0.08 - 0.39	Single	2	Elemental balance in water affected
uration Index)	SI	Ą	NA	Ν	Average		0.31	Sample	0.57	by temperature, other factors
Hardness	mdd	Ą	AN	ΑZ	Range Highest RAA		190 - 300	Sample	260	Municipal and industrial waste discharges
Mocrosition	to the same of	VIV	VIA.	VIV.	Range		20 - 29	Single	30	
	Ha	Ĭ.	C)	Į.	Range		7.9 - 8.0	Single	67	
	Units	NA	NA	NA	Average		7.9	Sample	8.0	
	00000	<u> </u>	VIA.	4	Range		4.2 - 5.0	Single	7 7	
Polassium	ppm	ZA	NA	NA	Range Range		78 - 100	Single	4.	
Sodium	mdd	A	NA	Ν	Highest RAA		93	Sample	95	
	maa	F	Ą	0.30	Range Highest RAA		1.8 - 2.3	A A		Various natural and man-made sources
N-Nitrosodimethylamine	2	-			Range		ND - 0.002			By-product of drinking water chloramination;
(NDMA) (w)	quu	NI = 0.01	0 003	0000	Dance	Distribution System-wide:	ND - 0.01			Control of the Contro

### **Footnotes**

- (a) The turbidity level of the filtered water shall be less than or equal to 0.3 NTU in 95% of the measurements taken each month and shall not exceed 1 NTU at any time. Turbidity is a measure of the cloudiness of the water and is an indicator of treatment performance. The averages and ranges of turbidity shown in the Secondary Standards were based on the treatment plant effluent.
- (b) Total coliform MCLs: No more than 5.0% of the monthly samples may be total coliform-positive. Compliance is based on the combined distribution system sampling from all the treatment plants. In 2009, 8116 samples were analyzed and two samples were positive for total coliforms. The MCL was not violated.
- (c) E. coli MCL: The occurrence of two consecutive total coliform-positive samples, one of which contains E. coli, constitutes an acute MCL violation. The MCL was not violated.
- (d) All distribution samples collected had detectable total chlorine residuals and no HPC was required. HPC reporting level is 1 CFU/mL.
- (e) Aluminum, copper, MTBE, and thiobencarb have both primary and secondary standards.
- (f) MTBE reporting level is 0.5 ppb.
- (g) Lead and copper are regulated as a Treatment Technique under the Lead and Copper Rule, which requires water samples to be collected at the consumers' tap. If action levels are exceeded in more than 10% of the consumer tap samples, water systems must take steps to reduce these contaminants.
- (h) Metropolitan was in compliance with all provisions of the State's Fluoridation System Requirements.
- (i) State MCL is 45 mg/L as nitrate, which is the equivalent of 10 mg/L as N.
- (j) Perchlorate reporting level is 2 ppb.
- (k) Data collected from four consecutive quarters of monitoring in 2008.
- (I) The gross beta particle activity MCL is 4 millirem/year annual dose equivalent to the total body or any internal organ. The screening level is 50 pCi/L.
- (m) State MCL is 5 pCi/L for combined Radium-226 and -228.
- (n) Metropolitan was in compliance with all provisions of the Stage 1 Disinfectants/Disinfection By-Products (D/DBP) Rule. Compliance was based on the RAA.
- (o) Reporting level is 0.5 ppb for each of the following: bromodichloromethane, bromoform, chloroform, and dibromochloromethane.
- (p) DLR is 1.0 ppb for each of the following: dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid; and 2.0 ppb for monochloroacetic acid.
- (q) Bromate reporting level is 3 ppb.
- (r) In January 2009, the annual sample for the TON from the Skinner water treatment plant was reported at 12 TON, exceeding the secondary MCL of 3 TON. The high TON level was reported to the State and the required quarterly follow-up samples were collected in April (20 TON), July (17 TON), and October (24 TON). Metropolitan utilizes a flavor-profile analysis (FPA) method that can detect odor occurrences more accurately and found the FPA samples from this location acceptable. No taste and odor event was observed and no complaints were received during the period.
- (s) Data collected from February 2009 to August 2009. Minimum reporting levels are as stipulated in the Federal UCMR 2. List 1 - Assessment Monitoring consists of 10 chemical contaminants for which standard analytical methods were available. List 2 - Screening Survey consists of 15 contaminants for which new analytical methods were used. All analysis conducted by contract laboratories. Values listed in State DLR column are Federal minimum reporting levels.
- (t) Chromium VI reporting level is 0.03 ppb.
- (u) AI <10.0 = Highly aggressive and very corrosive water AI > 12.0 = Non-aggressive water AI (10.0 - 11.9) = Moderately aggressive water
- (v) Positive SI index = non-corrosive; tendency to precipitate and/or deposit scale on pipes Negative SI index = corrosive; tendency to dissolve calcium carbonate
- (w) Analysis conducted by Metropolitan's Water Quality Laboratory using Standard Methods 6450B.



# **Summary information**

### Fluoride (treatment-related)

The Metropolitan Water District started adding fluoride at each of the five water treatment plants in fall 2007, adjusting the natural fluoride level in the water (ranging at 0.1 - 0.4 ppm) to the optimal range of 0.7 - 0.8 ppm,



as State regulations require that fluoridating systems comply with temperature-appropriate fluoride levels as indicated in Section §64433.2 of the California Title 22 Code of Regulations.

### Required information for lead

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Carlsbad Municipal Water District is responsible for providing high

quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

# Stage two drought alert

# Even though Carlsbad had a rainy winter, water conservation is still very important.

Mandatory water use restrictions were established in 2009 by water agencies throughout San Diego County, including the Carlsbad Municipal Water District. The region is currently in a stage two drought alert, which includes the following water use rules.

- Limit residential and commercial landscape irrigation to no more than three assigned days per week on the following schedule (does not apply to commercial growers or nurseries):
  - Homes with odd-numbered addresses: Sunday, Tuesday, and Thursday
  - Homes with even-numbered addresses: Saturday, Monday, and Wednesday
  - Apartments, condos and businesses: Monday, Wednesday, and Friday
- Limit lawn watering and landscape irrigation to no more than 10 minutes a station, per assigned day (does not apply to systems using water efficient devices, such as drip irrigation).
- Irrigate landscape before 10 a.m. and after 6 p.m. only.
- Stop water waste from inefficient landscape irrigation. Repair all leaks within 72 hours.
- No washing down of hard surfaces, such as driveways and sidewalks with a hose, unless necessary to remove safety or sanitation hazards.
- If washing vehicles at home, use a bucket and hose equipped with a shut-off nozzle. Do not allow runoff to enter the street and storm drain.
- Serve water in restaurants only on request.
- Offer hotel guests the option of not laundering towels and linens daily.



## Level 4 - Emergency

**Mandatory** Water Conservation More than 40% Reduction

### **Level 3 - Critical**

**Mandatory** Water Conservation Up to 40% Reduction

We Are Here

### Level 2 - Alert

**Mandatory** Water Conservation Up to 20% Reduction

### Level 1 - Watch

Voluntary Water Conservation Up to 10% Reduction

# Landscape watering rules

Clip the watering schedule and keep near your sprinkler timer as a reminder.



For a complete list of water use rules, visit www.carlsbadca.gov/water or call 760-438-2722.



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**Water Quality** Report 2010



